What is claimed is:

1. A plasma etching apparatus comprising:

a processing chamber in which a plasma etching process is performed;

a monitoring window of transparent material, said monitoring window being disposed in a side wall of said processing chamber, and said monitoring window having a flute at an inner surface thereof that faces the interior of said processing chamber;

a heater positioned relative to said monitoring window so as provide heat that is concentrated at the flute of said monitoring window; and

an optical detector mounted outside said processing chamber and in alignment with the flute of said monitoring window so as to detect a change in the process occurring in said chamber via the flute.

2. The apparatus of claim 1, wherein said monitoring window has a protrusion at a side thereof remote from the interior of said processing chamber, the protrusion being aligned with said flute in the direction of the depth of said flute and the length of said protrusion, and said heater is positioned to apply heat directly to the protrusion.

3. The apparatus of claim 1, wherein the flute extends to an inner end of said protrusion.

4. The apparatus of claim 1, and further comprising polymer attracting means for attracting polymer within the processing chamber.

5. The apparatus of claim 4, wherein said polymer attracting means is disposed beside or beneath said monitoring window.

6. The apparatus of claim 4, wherein said polymer attracting means is an electrostatic device that generates an electrostatic force in response to an applied control signal.

7. The apparatus of claim 4, wherein said polymer attracting means is a cooling device.